

Remarks

Applicants request reconsideration and allowance of the subject application in view of the following remarks.

Claims 68-84, 88, and 120-125 are currently pending, of which claims 68 and 125 are independent.

Election of Species Requirement

In the Office Action, claim 125 was withdrawn from consideration on the ground that it allegedly is directed to a non-elected species. Specifically, the Office Action asserts that claims 68-84, 88, and 120-124 constitute one species wherein the web material is formed into a sleeve-like configuration and then filled with a matrix resin, while claim 125 is directed to a another species wherein the matrix resin is deposited and then the sleeve-like configuration is formed.

Applicants respectfully disagree with the Office Action's reading of the claims and submit that claim 125 should be examined together with the rest of the pending claims. It is improper to read a specific order of steps into a method claim when the language of the method claim does not impose a specific order on the performance of the steps. MPEP § 2111.01; Altiris Inc v. Symantec Corp., 318 F.3d 1363, 1370-71, 65 USPQ2d 1865, 1869-70 (Fed. Cir. 2003). Here, there is nothing in the language of claims 68-84, 88, and 120-124 that requires the web material to be formed into a sleeve-like configuration before depositing the matrix-resin-precursor composition on the web material. Similarly, the language of claim 125 does not expressly require that the laminate be folded into a sleeve-like configuration after the matrix-resin-precursor composition is deposited thereon. Accordingly, the factual basis for the election-of-species requirement is flawed. Applicants therefore request that the requirement be

withdrawn, that claim 125 be examined together with claims 68-84, 88, and 120-124, and that the next Office communication indicate the results of such examination.

Claim Rejections

The Office Action rejects claims 68-84, 88, and 120-124 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,605,343 (Motoi)¹ in view of U.S. Patent No. 5,474,721 (Stevens). Applicants submit, however, that the combination of Motoi and Stevens fails to teach or suggest Applicants' invention as recited in independent claim 68. Therefore, Applicants respectfully traverse this rejection.

Claim 68 recites, among other features, applying a non-foaming thermosetting-resin-precursor mixture to the web material so as to impregnate the web material (step b) and allowing this thermosetting resin to set so that the web material is stiffened (step f). By providing a stiffened web material outside of the reinforcing cords and core material, Applicants' claimed invention protects the cords and core material against damage that could otherwise result in failure of the composite material under load.

Motoi, by contrast, discloses a method of making a composite material having a compliant (i.e., non-stiff) surface layer. Indeed, the Office Action states that Motoi "prefers" a foamable resin to form the outer fiber-reinforced layer and that all of the examples disclosed in Motoi employ a foamable resin. Nevertheless, the Office Action asserts that Stevens would have made it obvious for one of ordinary skill in the art to replace the foamable resin taught by Motoi with a non-foamable, thermosetting-resin-precursor mixture, as recited in claim 68.

¹ The Office Action refers to Motoi as U.S. Patent No. 6,635,343. Applicants assume this was a typographical error, and that the Office Action intended to refer to U.S. Patent No. 6,605,343.

Applicants strongly disagree. Motoi's choice of resin is more than mere happenstance. Motoi is directed to a composite material for use primarily as a railroad cross tie, or "sleeper." (See, e.g., Motoi, col. 1, lines 10-11.) JP 5-138797, which Motoi discusses at col. 1, lines 40-62, explains that it is important for a railroad cross tie to have a relatively soft surface so that gravel in a railroad bed can penetrate (indent) the undersurface of the cross tie in order to prevent lateral slippage of the cross tie.² Consistent with this, Motoi repeatedly discloses that the composite material disclosed therein must have a sufficiently large bending modulus (see, e.g., col. 7, lines 32-43), must be able to achieve long-term bending durability (see, e.g., col. 7, lines 44-50), and must be able to easily absorb vibrations to reduce noise (see, e.g., col. 25, lines 48-50). Thus, one of ordinary skill in the art would have realized that Motoi's choice of resin is vital to the functionality and performance of the Motoi composite material. The skilled artisan certainly would not have replaced Motoi's compliant surface layer with a non-foamed, stiffened web material as recited in claim 68 in the absence of a compelling reason to do so -- which the record here does not provide. Moreover, doing so would have rendered the modified Motoi composite material unsuitable for use as a railroad cross tie, thus defeating the basic purpose of the Motoi disclosure. An obviousness rejection that, as here, relies on a modification that renders the prior art unsatisfactory for its intended purpose or that changes the principle of operation of the prior art cannot stand. MPEP § 2143.01; *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984); *In re Ratti*, 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959).

² A copy of JP 5-138797, along with a full English translation thereof, was submitted with the Information Disclosure Statement filed August 4, 2005.

Stevens, meanwhile, lacks any teaching or suggestion that would have led one of ordinary skill in the art to disregard Motoi's mandate that the surface layer be compliant. In particular, the scant disclosure of Stevens does not reveal any reason why a surface layer impregnated with and stiffened by a non-foamable, thermosetting resin would have been preferable to -- or even interchangeable with -- a compliant surface layer when constructing a composite material of the type disclosed in Motoi. And, tellingly, despite the fact that non-foamed, thermosetting resins were allegedly "well known in the art," and notwithstanding the fact Stevens that predates Motoi, Motoi does not even so much as contemplate a surface layer impregnated with and stiffened by a non-foamable, thermosetting resin.

In sum, the record is wholly devoid of any reason for modifying Motoi in the manner alleged. The rejection appears to have been crafted not based on the teachings of the prior art and the knowledge of persons of ordinary skill in the art, but rather through the 20-20 vision of hindsight. This, of course, is improper. MPEP § 2141.01; McGinley v. Franklin Sports, Inc., 2626 F.3d 1339, 1351, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001).

Even assuming that the alleged combination of Motoi and Stevens were proper -- which Applicants resolutely deny -- such combination still would fail to teach or suggest salient features of Applicants' invention as recited in claim 68. As mentioned above, one of the features of Applicants' invention is the laying of reinforcing cords on at least one side of the web material that, when the web material is formed into a sleeve-like configuration, faces the interior. In other words, according to Applicants' method, the composite material is formed such that the cords are protected by the stiffened web material impregnated with the non-foamed, thermosetting resin.

The Office Action concedes that Motoi "does not specifically teach providing a layer of porous web material and a layer of parallel strands as the sleeve forming material, wherein the

porous material is on the outside of the sleeve in a single embodiment.” Nevertheless, the Office

Action asserts:

Motoi teaches that the outer layers of the composite material can comprise one or more layers of fibrous material such as parallel fibers, unidirectional fibers, bidirectional fibers and sewn mats. See col. 12, lines 14-27. Motoi further teaches additional reinforcing layers of paper can be added to the structure. See col. 18, lines 37-50. Therefore, the person of ordinary skill would have recognized that Motoi teaches the claimed elements and teaches that the elements can be combined by the process as set forth above at col. 27-29.

Applicants submit that a careful reading of these passages of Motoi does not lead to the conclusion that the Office Action asserts. The alleged “additional reinforcing layers of paper” discussed at col. 18, lines 37-50 are actually part of an intermediate layer 7h of the Motoi composite material that is interposed between the core layer 2h and the surface layer 3h in order to enhance adhesion of the surface layer to the core layer. (See Motoi, col. 18, lines 28-50; col. 29, lines 48-61; Fig. 12.) In other words, the outer layers of the Motoi composite -- which the Office Action asserts “can comprise one or more layers of fibrous material such as parallel fibers, unidirectional fibers, bidirectional fibers and sewn mats” are outside of the intermediate paper layer discussed at col. 18, lines 37-50 of Motoi. This is in stark contrast to Applicants’ invention, wherein reinforcing cords are laid on at least one side of the web material that, when the web material is formed into a sleeve-like configuration, faces the interior.

This difference is made even more abundantly clear by the discussion of Figs. 12 and 13 (reproduced below) at col. 27-29 of Motoi, which the Office Action cites in support of the rejection.

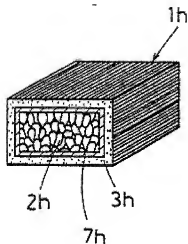


Fig. 12

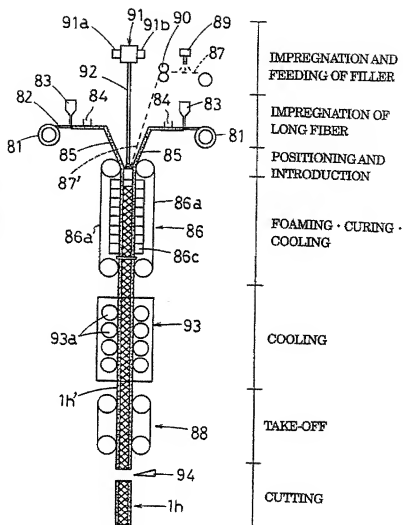


Fig. 13

In this embodiment, foam polyurethane resin is dispensed from tanks 83 onto long fiber bundles 82. The foam-polyurethane-resin-impregnated long fiber bundles are then passed through a movable mold 86 to form the surface layer 3h shown in Fig. 12. A sheet-like material 87 -- which forms the intermediate layer 7h shown in Fig. 12 -- is "introduced into the movable mold 86 so that it can be located between the core layer 2h and the surface layer 3h in the composite material 1h produced." (*Motoi*, col. 28, lines 42-45; emphasis added.) Thus, notwithstanding

the Office Action's assertion to the contrary, Motoj does not teach or suggest that sheet-like material can be located outside of the long fiber bundles 82 -- let alone teach or suggest the laying of reinforcing cords on at least one side of a web material that, when the web material is formed into a sleeve-like configuration, faces the interior, as Applicants' claim 68 recites.

For at least the foregoing reasons, Applicants submit that the cited art fails to teach or suggest Applicants' invention as recited in independent claim 68. Accordingly, that claim should be deemed allowable.

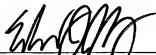
Dependent claims 69-84, 88, and 120-124 also should be deemed allowable, in their own right, for defining other patentable features of Applicants' invention in addition to those recited in claim 68. Further individual consideration of all of the dependent claims is requested.

Applicants submit that the subject application is in condition for allowance. Favorable reconsideration (or, in the case of claim 125, favorable consideration), withdrawal of the election-of-species requirement and rejection set forth in the Office Action, and an early Notice of Allowance are requested.

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Applicants' undersigned attorney can be reached in the Washington, D.C. office of Fitzpatrick, Cella, Harper & Scinto by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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